

## MEDICAL INFORMATION SYSTEM,

5 METHOD AND ARTICLE OF MANUFACTURE

## CROSS CLAIM TO RELATED APPLICATION

This application claims priority to United States  
provisional patent application number 60/279,870, filed  
10 March 29, 2001. This application also claims priority  
to United States provisional patent application number  
60/226,401, filed August 18, 2000.

## BACKGROUND INFORMATION

15 The invention relates generally to providing  
medical information. The invention includes a system, a  
method and an article of manufacture related to  
providing medical information and other information  
helpful in providing medical services.

20 In an existing system of providing medical  
information, many different pieces of information may  
need to be collected, reviewed and analyzed. The  
information may include medical consultant summaries,  
hospitalization summaries, diagnostic reports and  
25 physician records. Traditionally, this information  
exists in paper form and has been difficult to gather  
for viewing in one location. Furthermore, each piece of  
information may be in a different format, thereby making

it difficult for a person to quickly extract the  
information required.

#### BRIEF DESCRIPTION OF THE DRAWINGS

5 For a fuller understanding of the nature and  
objects of the invention, reference should be made to  
the following detailed description taken in conjunction  
with the accompanying drawings, in which:

Figure 1 is a diagram of a system according to the  
10 invention;

Figure 2 is a flow chart illustrating a method  
according to the invention; and

Figure 3 is a flow chart illustrating a method  
according to the invention.

#### DETAILED DESCRIPTION

Figure 1 illustrates a medical information system 5  
according to the present invention. The system includes  
a database 10 of health information descriptions. A  
20 description may include a medical history related to a  
patient, an image of the patient's face, the patient's  
address, contact information, next of kin, a signed  
power of attorney consenting to certain medical  
treatment such as the patient's desires regarding  
25 emergency or life sustaining treatment, medical

insurance information, employment information,  
preferences such as organ donor preferences, and blood  
type. The medical history portion of a description may  
include information about immunizations, surgeries,  
5 medical problems, allergies, current medications,  
laboratory test results and diagnostic test results.  
The health information descriptions may be in a  
standardized format. The health information  
descriptions may also be records of non-standardized  
10 documents that were scanned and then recorded in the  
database.

Access to the database 10 may be provided via a  
first computer 13 that is in communication with a second  
computer 16, for example via the Internet. The first  
15 computer 13 may be in communication with the second  
computer 16 via a first communication pathway 19. The  
second computer 16 may be in communication with the  
database 10 via a second communication pathway 22.

A description may be related to one or more  
20 associated pairs. An associated pair may include an  
associated access code and an associated password. The  
associated access code and the associated password each  
may be, for example, a series of characters issued by an  
operator of the system 5. Either code may be similar to  
25 a code issued by a medical organization, such as the

American Medical Association, a government or chosen by the user. Either code may correspond to a fingerprint or retinal scan of the user.

5 The first computer 13 may be programmed to provide a prospective pair. A prospective pair may include a prospective access code and a prospective password. The second computer 16 may be programmed to determine whether a prospective pair corresponds to one of the associated pairs. If the prospective pair is determined  
10 to correspond to one of the associated pairs, then the second computer 16 may provide the description that corresponds to the prospective pair.

In order to accommodate a change to a description, the first computer 13 may be programmed to permit a user  
15 to enter the change and then provide the change. The second computer 16 may be programmed to receive the change, and then modify the database 10 to reflect the change. The second computer 16 may also be programmed to record who made the change. The system 5 may be made  
20 so that any changes are made only by certain users, for example, by a patient's primary care physician.

The system 5 may include a card 25 having a card code. The card code may correspond to the prospective access code the user desires to have provided by the  
25 first computer 13. For example, each patient,

physician, health care provider and medical cost payer  
may have a card 25, each with a unique card code so the  
system 5 can determine which user is using the system 5.  
The card code may be an optically or magnetically  
5 scannable code that is unique to and identifies a user  
of the system 5. The card code may also be stored in a  
computer readable memory on the card 25, for example in  
a manner similar to a smart card. The system 5 may  
include a card reader 28 that reads the card code and  
10 provides the card code to the first computer 13. It  
should be noted that the system 5 may be implemented  
such that the card 25 has a device, such as a micro-  
computer, that requires entry of a card password prior  
to the card 25 providing the card code. The card  
15 password may be the same as the associated password  
referenced above, or may be another password.

In use, one of the associated pairs may be issued  
to one of the patients, and the description  
corresponding to that patient may be related in the  
20 database 10 to that associated pair. Then, when the  
patient's associated pair is provided, the description  
related to that patient will be provided by the system  
5.

One of the associated pairs may be issued to a  
25 physician, and the descriptions corresponding to that

physician's patients may be related in the database 10  
to the physician's associated pair. Then, when the  
physician's associated pair is presented as a  
prospective pair, the physician may be provided with any  
5 of the descriptions of his/her patients.

One of the associated pairs may be issued to a  
health care provider, such as a hospital, and the  
descriptions corresponding to the health care provider's  
patients may be related in the database 10 to the health  
10 care provider's associated pair. Then, when the health  
care provider's associated pair is presented as a  
prospective pair, the health care provider may be  
provided with any of the descriptions of its patients.

One of the associated pairs may be issued to a  
15 medical cost payer, such as a medical insurance company.  
The descriptions corresponding to the medical cost  
payer's customers may be related in the database 10 to  
the medical cost payer's associated pair. Then, when  
the medical cost payer's associated pair is presented as  
20 a prospective pair, the medical cost payer may be  
provided with any of the descriptions of its customers.

In a variation of the embodiment described above, a  
patient's health information description may be accessed  
upon providing a prospective pair that includes a  
25 patient's associated access code and the password of

another user, such as a physician, health care provider,  
or medical cost payer. In this manner, the patient need  
not disclose his/her password to another user in order  
to permit that other user to have access to the  
5 patient's description. Once the other user accesses the  
patient's description, that other user's associated pair  
may be related to the patient's description, thereby  
allowing that other user to access later the patient's  
description without using the patient's access code.

10 For example, if a patient arrives at a hospital and  
is unable to provide his/her password, but a hospital  
staff member discovers the patient's card 25, the  
hospital staff member may swipe the patient's card 25  
through a card reader, and then the staff member may  
15 swipe the hospital's card 25 or the staff member's card  
25 through the card reader. The system would then  
prompt the staff member for the password corresponding  
to the hospital's card 25 or the staff member's card 25,  
as the case may be. Upon entering the password, the  
20 staff member would be permitted access to the patient's  
information.

The system 5 may be made so that a message is sent  
to a patient, physician, health care provider, medical  
cost payer, or other individual when a description is  
25 provided. For example, the second computer 16 may be

programmed to cause a message to be sent to one of the patients when the description relating to that patient is provided. The message may indicate who accessed the description, and may also indicate whether any changes  
5 were made, and if changes were made, what those changes are.

The invention may be implemented as a method. Figure 2 illustrates a method according to the invention. In one such method, a database of health  
10 information descriptions is provided 100. Each description may relate to a patient and an associated pair. Each associated pair may comprise an associated access code and an associated password. A prospective pair, comprising a prospective access code and a  
15 prospective password, may be provided. If the provided prospective pair is received 103, a determination 106 may be made as to whether the prospective pair corresponds to one of the associated pairs. If the prospective pair is determined to correspond to one of  
20 the associated pairs, then the description that corresponds to the prospective pair may be provided 109.

In one embodiment of the method, a card having a card code corresponding to the prospective access code may be provided. Once the card code is read, the  
25 prospective access code may be provided. In one method



of the present invention, a user must enter a password before the prospective access code is provided. See Figure 3. In another embodiment of the method, a fingerprint having a pattern is read, and the pattern is provided in the form of a prospective access code. In another embodiment of the method, a retina is read and the pattern on the retina is provided in the form of a prospective access code.

The method may include receiving a change to a description. Once a change is received, the description may be updated to reflect the change. The method may include recording who made the change.

A method according to the present invention may issue one or more access codes. For example, one of the associated pairs may be issued to one of the patients, and that associated pair may be related only to the description of that patient. As another example, one of the associated pairs may be issued to a physician, and that associated pair may be related to a plurality of the descriptions corresponding to the physician's patients.

As a third example, an associated pair may be issued to a health care provider, and related to a plurality of descriptions corresponding to patients to whom the health care provider provides services. As a

fourth example, an associated pair may be issued to a medical cost payer, and related to a plurality of descriptions corresponding to patients for whom the medical cost payer provides services.

5           In an embodiment of the invention, a message may be provided 112 to a user, such as a patient, physician, health care provider or medical cost payer when a patient's description is provided. In this manner, users can keep track of when and who is accessing  
10   his/her description.

          The invention includes an article of manufacture  
31. The article of manufacture 31 may be a computer usable medium, such as a CD ROM, random access memory or read only memory. The computer usable medium has  
15   computer readable program code instructions embodied therein to cause a computer to provide access to medical information. The instructions may have one or more computer readable program code modules to (1) determine  
20   whether a prospective pair is among a group of associated pairs, and (2) if the prospective pair is among the group of associated pairs, provide medical information corresponding to the prospective pair.

          The article of manufacture 31 may also include a computer readable program code module to instruct a  
25   computer to change the provided medical information, and

may further include a computer readable program code  
module to record who made the change to the provided  
medical information. In addition, the article of  
manufacture 31 may include a computer readable program  
5 code module to instruct a computer to provide a message  
to a patient when the description relating to the  
patient is provided.

Although the invention has been described with  
respect to one or more particular embodiments, it will  
10 be understood that other embodiments of the invention  
may be made without departing from the spirit and scope  
of the invention.